

Listing of Claims

1. (Cancelled).
2. (Currently Amended) A magnetizable material detection device according to claim ~~[[1]]~~ 7, ~~wherein the supporting member comprises an arm and a pipe, and the arm and the pipe are coupled so that the pipe is confined within the arm comprising returning means for returning the magnet to an original position where the magnet is not displaced from a position where the magnet is displaced.~~
3. (Currently Amended) A magnetizable material detection device according to claim ~~2~~ 7, ~~further comprising a means for visually indicating the on/off state of the Hall device wherein the returning means is configured by a plate spring.~~
4. (Cancelled).
5. (Currently Amended) A magnetizable material detection device according to claim ~~[[1]]~~ 7, wherein the configuration of the magnet is any one of a cube, a rectangular solid, a cylinder or a pipe.
6. (Currently Amended) A mobile object detection system comprising the magnetizable material detection device according to claim ~~[[1]]~~ 2 7 and the mobile object comprising the magnetizable material.

7. (Currently Amended) A magnetizable material detection device for detecting a magnetizable material which can be magnetized by a magnet comprising:

a first magnet displaceable in the direction of its magnet poles;

a Hall device for detecting displacement of the first magnet, having an operating point corresponding to a given magnetic force whose magnetic state the Hall device outputs, characterised in that the magnet and the Hall device are disposed such that ~~are disposed such that~~ on/off state of the Hall device changes when the magnet is displaced such that the boundary line of the magnet's poles crosses the operating point, wherein the on/off state of the Hall device depends on the strength of the magnetic force of the first magnet at the operating point against the given magnetic force, enabling to detect that the magnetic material is displaced within the predetermined distance from the body of the magnetic material detection device;

wherein the first magnet and the Hall device are disposed such that when a boundary line of the first magnet poles crosses the operating point, the on/off state of the Hall device changes;

a second magnet, being different from the first magnet, for attracting the magnetizable material; and

a supporting member, hung by a support plate, for supporting the first magnet and the second magnet ~~which is different from said magnet,~~ whose one end is connected to the first magnet and whose other end is connected to the second magnet, ~~wherein the second magnet locates near a displacement path of the magnetic material;~~

wherein when the magnetizable material is displaced within a predetermined distance from the body of the detection device, the second magnet attracts the magnetizable material to cause the supporting member to be inclined so that the boundary line of the first magnet poles crosses the operating point of the Hall device and the on/off state of the Hall device changes, by which the minute displacement of the magnetizable material is detected.

8. (Cancelled).

9. (Cancelled).

10. (Cancelled).

11. (Cancelled).

12. (Cancelled).

13. (Currently Amended) A magnetizable material detection device for detecting minute displacement of a magnetizable material which can be magnetized by a magnet comprising:

a first magnet displaceable in the direction of its magnet poles; ~~[[and]]~~

a Hall device having an operating point corresponding to a given magnetic force wherein the on/off state of the Hall device depends on the strength of the magnetic force of the first magnet at the operating point against

the given magnetic force;

wherein the first magnet and the Hall device are disposed such that when ~~the magnetic material is displaced within the predetermined distance from the body of the magnetic material detection device so that the an~~ isomagnetic plane of the given magnetic force of the first magnet pole crosses the operating point, the on/off state of the Hall device is reversed, ~~by which the minute displacement of the magnet material is detected;~~

a second magnet, being different from the first magnet, for attracting the magnetizable material; and

a supporting member, hung by a support plate, for supporting the first magnet and the second magnet ~~which is different from said magnet,~~ whose one end is connected to the first magnet and whose other end is connected to the second magnet, ~~wherein the second magnet locates near a displacement path of the magnetic material;~~

wherein when the magnetizable material is displaced within a predetermined distance from the body of the detection device, the second magnet attracts the magnetizable material to cause the supporting member to be inclined so that the isomagnetic plane crosses the operating point of the Hall device and the on/off state of the Hall device is reversed, by which the minute displacement of the magnetizable material is detected.